

SECTION 36

SUBSURFACE EXPLORATIONS

1.36.1 GENERAL

- (a) Required borings shall be located on the plan of the structure by station and offset from the base line. Five copies of the print shall be enclosed with the memorandum of transmittal. Request for borings shall be made as early as possible in the preliminary design stage.
- (b) At least two borings shall be made for each bridge substructure unit. For long retaining walls and culverts, borings should be spaced not less than 15 meters to not greater than 30 meters apart. One boring shall be provided at each footing location for both overhead and cantilever sign structures and high-level light tower foundations.
- (c) Where piles are anticipated, depths of borings shall be determined accordingly. The borings shall be deeper than any anticipated pile lengths.
- (d) Location of borings and identification numbers shall be shown both on preliminary and final General Plan and Elevation sheets for each bridge and structure.
- (e) Subsurface soil profiles and boring log information shall not be shown on the contract plans. Copies of boring logs are available to bidders as separate documents. The format of a typical boring log is illustrated on Page 1.36-2.

1.36.2 BORING LOG FORM

FORM SO-2M		NEW JERSEY DEPARTMENT OF TRANSPORTATION					
ROUTE:		LOCAL NAME:	NJDOT BORING NO.:				
SECTION:		FIELD BORING NO.:					
STATION:	OFFSET:	REFERENCE LINE:	GROUND ELEVATION:				
BORINGS BY:	DATE STARTED:		Ground Water Elevation 0 Hr. _____ Date: _____ 24 Hr. _____ Date: _____ P.P. Installed _____				
INSPECTOR:	DATE COMPLETED:						
DEPTH		Blows on Spoon	SOIL DESCRIPTION & STRATIGRAPHY				
(m)	NO.	DEPTH		0	150	300	450
1.5							
3.0							
4.5							
6.0							
7.5							
9.0							
10.5							
12.0							

Nominal I.D. of Drive Pipe _____ 65 mm 100 mm Nominal I.D. of Split Barrel Sampler _____ 35 mm Weight of hammer on Drive Pipe _____ 140 kg Weight of hammer on Split Barrel Sampler _____ 63.5 kg Drop of hammer on Drive Pipe _____ 600 mm Drop of hammer on Split Barrel Sampler _____ 760 mm	The subsurface information shown hereon was obtained for State design and estimate purposes. It is made available to authorized users only that they may have access to the same information available to the State. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgement of such authorized users.
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Core Size: _____ Soil descriptions represent a field identification after D.M. Burmister unless otherwise noted. Driller: _____	NEW JERSEY DEPARTMENT OF TRANSPORTATION Geotechnical Engineering Unit Approximate Change in Strata: _____ Inferred Change in Strata: _____
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1.36.3 PILE FOUNDATIONS

- (a) To provide a general idea for the proper use of the following methods, the following guidelines for jetting and pre-boring are given. A review and recommendations by the Bureau of Structural Engineering's Geotechnical Engineering Unit may be warranted on a project to project basis.

(1) Jetting

- Not to be used where a disturbance to existing foundations or utilities would result.
- Not to be used where disposal of jet water and soil would be a problem.
- In general, jetting would be used in very dense granular or silty soils where displacement piles are being driven in water.

(2) Pre-Boring

- To be used when displacement piles are to be driven through a compacted fill over 3 meters high.
- To be used where driving piles full depth would disturb adjacent structures or utilities. Additionally, a survey, with photographs, should be performed before and after pre-boring and pile driving operations to verify occurrence of any damage to structures or utilities.
- Pre-drilling should not be used below bearing soils for friction piles.
- In loose granular soils or soft cohesive soils drilling mud may be necessary to keep the hole open.